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Ecologies of Subversion—Troubling Interaction Design for Climate Care

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*Climate care is a journey to remake cultures, find justices and regenerate habitats; there is no final destination.

*Subversion is needed to counter how (technological) initiatives become yet further means of exploiting for profit.

*Creative practitioners and activists are forming the ecologies of subversion that generate new points of departure.

I have a history with subverting. In earlier research, I studied the design of guerilla tactics with activists. For theory, I drew on *queering* and *troubling* as creative deviation and, in doing so, pointed to the benefits for both identity and technology development. I did not anticipate how this would feature again, later in my career, when the overriding need is for attention to turn to climate matters. But if ever there was a moment to challenge norms, it is now. Consequently, much of this article is about subversion.

Let me first subvert *interaction design (IxD)*. I began this argument in 2008 in a workshop at the British HCI Conference in Liverpool. It was met with indignation. I suggested that, with the impact of digital networks, the discipline was not so much about *humans using computers* as about how all interactions are affected by the technology around us; therefore, the term could mean *how we design ourselves and our interactions through our devices*. I didn't realize how important the argument would become. Now, I would argue that we, as HCI researchers and designers, are not designing individual interactive devices; we are contributing to a technologized environment where, regardless of our personal motivations, world-defining initiatives are being pursued for profit and/or to see what greater technologization is possible (i.e., as an end in itself). Neither goal is healthy for life on the planet [1].

I was more easily challenged in 2008, but these days there is increasing evidence of the digital appropriation of lives, livelihoods, and materials. Now, the biggest technology companies handle more revenue than most countries, ignoring national regulators. Now, e-waste is the world's fastest-growing domestic waste stream (<http://ewastemonitor.info>), piling up in the Global South, while Global North mining for electronic components further devastates Global South land.

In a recent talk, political theorist Achille Mbembe described these developments as another form of colonialism. He argues that there is an explicit kinship between

contemporary forms of extraction and older forms of domination, with a constitutional denial of one fact: that we coevolve with the biosphere, we depend on it, and we are defined through it. “Colonialism is the disavowal of that debt and responsibility,” Mbembe says, pointing in particular to technological escalation and a form of capitalism that is both colonizing and computational: “The age of the algorithm...turns us all into artefacts and makes redundant a huge part of the muscular power that capitalism relied on” [2].

This relation between people, machines, and land is becoming normalized, like the ones before it. With it, we face futures where potentially benign smart systems that run our finance, politics, and social care are actually in thrall to a market that rejects anything abundant (air, water, creative labor, signs of life) and values only scarcity and the price that can be placed on it. We face the prospect of networked “smart” cities where control rests with the company that provides the kit and connectivity (though the term *control* assumes it is possible to predict the outcomes of a complex system). Intrusive surveillance, amplification of inequalities, algorithmic policing, hardwired consumerism: There is so much potential for damage to the spirit beyond the catastrophic failure of homes and workplaces. Too many public administrations are obliged to buy cheap and without a real sense of what technology can enable or what it means to be run by a corporatocracy. Power consumption and materials acquisition are rarely discussed, from training AI models [3] to sourcing rare earth elements [4]. Couple this with a growing underclass whose labor is no longer needed, but who keep the streaming media services in business. Environmental justice questions abound, such as “Whose lives are valued?”, “Who will have quality of life?”, and “What of the rest of life on earth?”

Viewed in this stark, look-at-the-ramifications way, the system is horrific to sustain but almost impossible to reroute. It has become its own guarantor: The bigger and slicker it gets, the more it erases alternatives. It absorbs challenges and co-opts initiatives meant as barriers. And as it gets smarter—using technological advances—it co-opts faster. To see this co-option in action, think of the greenwashing performed by corporations, where advertising pays lip service to virtuous trends while dangerous practices continue. (For an example of greenwashing in the bottled-juice industry, watch this Coca-Cola-owned company’s ad use the climate crisis to increase market share: <https://www.youtube.com/watch?v=YLcgkY2g3pU>.) Against this scale of uncaring, even cynical, progression, what power do people have to resist?

Here is where it is important to view interaction design as broader than our direct interfaces with machinery and regard it as a cultural phenomenon. What we face in pursuit of material progress can only be unmade if our goals globally turn to

regeneration and care. We need to design the interactions to carry that change forward. And for that we need further subversions:

- Our actions have to challenge dominant Global North thought about what is valuable and change the narrative.
- Our actions have to resist being co-opted and becoming part of business as usual.
- Our actions have to stay ahead and mutate, like activist tactics, to make space for people to consider how things can be different.

It is often said that ideas pass from philosophy to science to technology. But ideas outside the usual paradigm often have an earlier stage. Before an idea is fully formulated, it is often a subversion of the current state of affairs by a playful or indignant creative. In our own practices of HCI and IxD, we see this in the critical and speculative design fields. And beyond that, some artists, authors, and activists (and some hybrid thinkers and makers who cannot be classified) are casting versions of reality as it *could be*. They may be doing this to inspire thought, to critique, or to offer alternatives. These different futures exist, then, as provocations to be taken up, ignored, or rejected alongside more powerful futures, predicted and produced by those with the means to enact them. At any time, there will be someone publicly imagining a world without war (e.g., John Lennon's "Imagine": <https://www.youtube.com/watch?v=YkgkThdzX-8>), while governments balance their books with the profits from conflict and wait for dreamers to disappear (or actively suppress protest: see [5]). It is sobering that the first year of the Covid pandemic saw more environmentally motivated murders than ever before [6].

However, if enough projects are tugging away at current realities and suggesting things could be different... if enough people are working to propel our narratives in more critical and creative directions... ? (And there will be multiple directions, for subversion's only direction is "away.") Ex-dissident and former Czech president Václav Havel was confident: "I have repeatedly seen that small acts of resistance have had incomparably greater impact than anybody could have predicted at the time" [7]. And pluralism itself is important. Dissent provides space for individuals to make their own moral judgments [8]. Might we yet establish space to create cultures that are open enough, adaptable enough, and pleasant enough, where the first thought is not "more" but "sufficient for all"?

This sufficiency includes *climate care*. But this makes no appeal to *sustainability*, since we are not in the business of sustaining so much as asking what regenerative and respectful co-living looks like. Most of us only ever glimpse worlds we would like to sustain and see more that needs changing. (*Do we use our creative energy in*

fulfilling ways? Are we able to rest, play, and seek spiritual connection as we please? Are we able to support others as we would like?) We are all, as a world, in crisis. Crisis is a precarious moment, one when we might ask what else needs tackling (*Poverty? Inequality? Racism? Patriarchy? Animal rights? Understandings of sentience?*). In doing so, we learn that these issues are wholly interconnected. It is the rapacious nature of colonialist thinking and extractivist practice that causes both homelessness and climate destruction.

Yet, ecological balance is not so much a state as a set of relations that continually go out of equilibrium. So the next act of subversion is not to plan a new, better *state* of affairs, but rather to embrace a *journey* toward regeneration and greater equity. We cannot know what care feels like for all; we cannot reconcile every contradictory need. We *can* set off in a direction toward supportive infrastructures and new eco-socio-economic systems, where profit is second to well-being. It is enough, then, for the moment, to agree there must be a path and it is not the one we have now: over a cliff. Only those who believe in life after the extinction of most beings or success on another planet can choose that path willingly.

We need to change the basis of our interactions and the relations they create. There is a *window of discourse*, the range of ideas acceptable to mainstream publics at a particular time. As time passes, the window moves, shrinks, or expands and an idea becomes more or less visible and acceptable. For instance, U.K. compatriots with long memories are wondering how the window moved so that the rhetoric of the far-right fringe in 1990 is now the accepted policy of the present government. Obviously, social media and the “fake news” phenomenon is playing into the place/shape of the window and what people think is reasonable to think [9]. The design of networked platforms (e.g., Facebook) and the cumulative effects of networks contribute to these shifts. Individual designers cannot design networked effects out of single products. It would take a swing away from using the combined output of several companies to counteract their effects. So, how might we subvert their use?

The people who can take us beyond our current paradigm and into new worlds are among us. They may *be* us. They trade generously in imaginative alternatives, prefigurative examples, and potential futures. They ask big ethical questions. And no single one of them will do, because to change the narratives by which we live and the cultures that dominate our lives and choices, we need to keep upending the current versions. And that takes critical mass.

Theater-maker and community activist Lucy Neal explains what creative practice can achieve in her collaboratively-written book *Playing for Time*: “Artists can be the

circuit breakers of tragedy, surprising people with alternative ways of seeing, jolting them awake from denial” [10]. She suggests that, well beyond common perceptions of artists’ role as interpreters, artists’ work can have a visionary character and “make the moment of recognition [of current unsustainable practices] less painful by opening possibilities for change and renewal.”

Cases of this abound, with an increasing digital and networked presence themselves, stimulated by the lockdowns of 2020–21. But my recent research collaborations suggest that while creative practices demonstrate great transformative potential in the area of social cohesion and environmental citizenship, and suggest new economic relations, they are often fragmented, poorly resourced, and badly understood [11]. There has been no synthesis of these culturally transformative processes across disciplines or practices. The impact is not visible. There is little policy buy-in and scarce public recognition of the importance of ongoing critique or an existential focus as part of climate care. Artists are asked to account for carbon saved, not hearts and minds changed or worlds reenvisioned—a great misunderstanding of what their cultural contribution is and could be.

Nonetheless, creative practitioners and activists in this space work knowingly alongside one another, aware they are part of something greater than any individual contribution. They are the idiosyncratic faces of a broad movement for change, like so many mushrooms sprouting from the mycelium below. They are forming the ecologies of subversion that might feed into new philosophies: the raw material of new ways of being, and the hope for shifts large enough to unsettle a path to extinction.

Thus, my latest incarnation as a subversive is as part of a consortium of researchers and practitioners who collectively want to “reduce the plausibility of the (dominant) present,” as one colleague summarized my recent pitch. In the CreaTures project (Creative Practices for Transformational Futures: <http://creatures-eu.org>), we build on insights showing that collective reflection, expansion of personal interests to broader eco-social considerations, and a chance to work together for change have inspired countless neighborhoods to take on business as usual [12].

CreaTures researches how socially engaged art, design, and games make eco-social change toward regenerative and respectful co-living. The consortium welcomes diverse ambitions for change, rather than holding up one version of what the world should be. It is not a research journey to a single outcome or a new end point; it is a meticulous inquiry into common process. Artists and academics work together, exploring practices of *calling into question* and its effects on those it touches. Superflux stages *Invocation for Hope*, where burned forest gives way to a flourishing

clearing in which we see ourselves alongside neighboring species. Furtherfield presents *The Treaty of Finsbury Park*, where more-than-human negotiations are in play. Cassie Thornton's *The Hologram* [13] offers a (sub)version of health care where emotional, social, and physical support comes in an ever-reproducing viral triangle of friends. There are more. Each contribution is distinct from its neighbors, yet they work together as a form of action research, a site for cross-fertilization, and an attractor for difference—perhaps the means to move windows of discourse a little and even open them into unfamiliar worlds. The word *troubling* seems apt for our research partner-practitioners' works; they resist definition but thrive as commentary on social norms. The works are fed by capitalism and exploitation, unable to live in their present form without such corrupting influences, yet intended to undermine them and offer an alternative to the dichotomy of human/more than human. What could be more troubling than that?

But even as these ideas—and the joy of rubbing them together—provide hope, vision, and a feeling of purpose, I know this work is always local, temporary, and partial. Such critical creative initiatives are needed everywhere. My ambition, then, is mobilizing subversive energy further—gently, with a focus on regenerative and respectful co-living—not merely as speculative designers but as people who understand interactions and their role in uniting us in changing. This is a key point: We all need to create the difference we want to see, starting as the designers of the potential for those changes. Paul Dourish once suggested that rather than using technology to provoke reflection on the environmental impact of individual actions, we could use it “to show how particular actions or concerns link one into a broader coalition of concerned citizens, social groups, and organizations” [14]. At the time, he held up social media as a possible site for “affiliation, alignment, and identification.” Today, social media is proving too divisive; it too has been co-opted to focus on profit at the expense of care. And so we need to use the techniques of artists and activists and stay one step ahead. Again. Technologies become traitors because they are never free of the world that makes them.

In the final analysis, climate care is not separate from care of ourselves: not because we are more important than other living creatures, but because respect for all life must emanate from the creature destroying the habitats on which all life depends. Subjugation of nature in pursuit of progress—subjugation of our abilities as flexible, creative creatures working together as part of the nature-culture of being entangled on this glorious planet—has led to a point where abundant resources are not only unequally distributed but also starting to dwindle. More of the same will not do. We need to redesign ourselves to fit, design the spaces in which that reshaping can take place, and design to protect these spaces so that the new fit can be our wisest,

gentlest, most creative selves. That is the subversive mission of interaction design right now.

If you are interested in discussing the themes in this article, consider joining the CreaTures-supported ATNC network (Art Tech Nature Culture) at <https://atnc.persona.co/>.

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Endnotes

1. For each support for disability, health care, education, or research, there is virtually staged warfare, gig employment, addictive distractions, network economy externalities, reductive algorithms, etc.
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